

I. AMENDMENT

In the Claims:

The following listing reflects amendments to the claims and replaces all prior versions and listings of claims in this application.

1. (Cancelled)

2. (Currently amended) ~~The An isolated GapC protein of claim 1, wherein the protein is a *Streptococcus dysgalactiae* GapC protein comprising the amino acid sequence shown at amino acid positions 1 to 336, inclusive, of Figures 1A-1B (SEQ ID NO:4) of SEQ ID NO:4.~~

3-50. (Cancelled)

51. (Currently amended) A vaccine composition comprising a pharmaceutically acceptable vehicle and a GapC protein according to claim 2, ~~wherein said GapC protein is selected from the group consisting of:~~

- ~~—— (a) a *Streptococcus dysgalactiae* GapC protein comprising the amino acid sequence shown at amino acid positions 1 to 336, inclusive, of Figures 1A-1B (SEQ ID NO:4);~~
- ~~—— (b) a *Streptococcus agalactiae* GapC protein comprising the amino acid sequence shown at amino acid positions 1 to 336, inclusive, of Figures 2A-2B (SEQ ID NO:6);~~
- ~~—— (c) a *Streptococcus uberis* GapC protein comprising the amino acid sequence shown at amino acid positions 1 to 336, inclusive, of Figures 3A-3B (SEQ ID NO:8);~~
- ~~—— (d) a *Streptococcus parauberis* GapC protein comprising the amino acid sequence shown at amino acid positions 1 to 336, inclusive, of Figures 4A-4B (SEQ ID NO:10);~~
- ~~—— (e) a *Streptococcus iniae* GapC protein comprising the amino acid sequence shown at amino acid positions 1 to 336, inclusive, of Figures 5A-5B (SEQ ID NO:12);~~
- ~~—— (f) a *Streptococcus* GapC protein having at least about 70% sequence identity to (a), (b), (c), (d) and (e); and~~

~~—(g) immunogenic fragments of (a), (b), (c), (d), (e) and (f), said fragments comprising at least about 5 amino acids.~~

52. (Cancelled)

53. (Cancelled)

54-61. (Cancelled)

62. (Original) The vaccine composition of claim 51, further comprising an adjuvant.

63. (Currently amended) A method of producing a vaccine composition comprising the steps of

(1) providing a GapC protein according to claim 2 ~~or an immunogenic fragment thereof, said fragment comprising at least about 5 amino acids~~, and

(2) combining said protein with a pharmaceutically acceptable vehicle.

64. (Original) A method of treating or preventing a bacterial infection in a vertebrate subject comprising administering to said subject a therapeutically effective amount of a vaccine composition according to claim 51.

65. (Original) The method of claim 64, wherein said bacterial infection is a streptococcus infection.

66. (Original) The method of claim 65, wherein said bacterial infection causes mastitis.

67- 72. (Cancelled)

73. (Currently amended) A method of detecting *Streptococcus* antibodies in a biological sample, comprising:

(a) reacting said biological sample with an isolated GapC protein according to claim 2 under conditions which allow said *Streptococcus* antibodies, when present in the biological sample, to bind to said GapC protein to form an antibody/antigen complex; and

(b) detecting the presence or absence of said complex, thereby detecting the presence or absence of *Streptococcus* antibodies in said sample.

74. (Cancelled)

75. (Cancelled)

76. (Currently amended) An immunodiagnostic test kit for detecting *Streptococcus* infection, said test kit comprising a GapC protein according to claim 2 and instructions for conducting the immunodiagnostic test.